

October 24, 2005

Guidance on Avian Influenza Testing

Dear Colleagues:

It is impossible to open a newspaper or listen to a news program without hearing the growing concern for an avian influenza pandemic. This prompts us to share guidance previously issued for our clinical laboratory colleagues on patients who should be considered at risk, specimens to collect and testing to undertake.

Testing for avian influenza A (H5N1) is indicated for hospitalized patients with:

- Radiographically-confirmed pneumonia, acute respiratory distress syndrome (ARDS), or other severe respiratory illness for which an alternate diagnosis has not been established **AND**
- History of travel within 10 days of symptom onset to a country with documented H5N1 avian influenza in poultry and/or humans (for a regularly updated listing of H5N1-affected countries, see the OIE website at http://www.oie.int/eng/en_index.htm and the WHO web site at <http://www.who.int/en/>).

Testing for avian influenza A (H5N1) should be considered on a case-by-case basis in consultation with MDCH and your local health department for hospitalized or ambulatory patients with:

- Documented temperature of $>38^{\circ}\text{C}$ ($>100.4^{\circ}\text{F}$), **AND**
- One or more of the following: cough, sore throat, shortness of breath, **AND**
- History of contact with poultry (e.g., visited a poultry farm, a household raising poultry, or a bird market) or a known or suspected human case of influenza A (H5N1) in an H5N1-affected country within 10 days of symptom onset.

Collect specimens from persons meeting the above clinical and epidemiologic criteria only after consultation with MDCH. Appropriate specimens include: bronchoalveolar lavage, tracheal aspirates, and nasopharyngeal or oropharyngeal aspirates, washes or swabs. Nasal swabs are not acceptable specimens. Swab specimens must be collected using only Dacron tipped swabs with aluminum or plastic shafts. Specimens may be collected and transported in viral transport medium. Specimens should be shipped to MDCH for testing using the most rapid means available. **Do Not send these specimens to commercial reference laboratories for testing.**

H5N1 is classified as a select agent, and culturing of clinical specimens for influenza A (H5N1) virus must be conducted under enhanced BSL3 conditions, including controlled access double-door entry with change room and shower, use

of respirators, decontamination of all wastes, and showering out of all personnel. Labs working on these viruses must also be certified by the U.S. Department of Agriculture.

Clinical specimens from suspect H5N1 cases may be tested by PCR assays under standard BSL2 conditions in a Class II Biological safety cabinet (BSC). In addition, commercial antigen detection testing can be conducted under standard BSL 2 conditions, although there is some indication that new biosafety guidelines will suggest use of a BSC for this testing. It is imperative that suspect H5N1 specimens not be placed into culture although routine rapid influenza testing may be performed on-site. Whether or not rapid testing is performed, once H5N1 is suspected based on the above criteria, PCR confirmatory testing must be utilized rather than viral culture.

At MDCH, a PCR assay will be utilized to confirm the specimen contains influenza A virus. If influenza A positive, a second PCR assay will be performed to subtype the neuraminidase portion of the virus. If it is not N1, the specimen will be placed in culture for subtyping. If it is N1, suggesting the possibility of H5N1, the hemagglutinin portion of the virus will be subtyped by a third PCR assay. If non-H5, the specimen will be placed in culture for subtyping. Specimens determined to be influenza A H5N1 will be sent to CDC for further analysis. Culture will not be attempted at MDCH.

A broader discussion of avian influenza will be included in the upcoming issue of *LabLink*, which may be accessed on-line at www.michigan.gov/mdchlab under Communications. Additionally, the National Laboratory Training Network will sponsor a free teleconference, *Influenza 2005: The Laboratory's Role in Pandemic Preparedness and Response*, on December 6, 2005. Register on-line at <http://www.nltn.org/courses> by selecting this course from those listed by its date (it is the second course listed for December 6). Register before the deadline of December 2, and download and duplicate handout materials for participants at your site. CEUs are available to laboratorians.

As clinical laboratorians, you are at the interface of the community and emerging infectious disease, and are essential to the public health response to agents such as avian influenza. Your role is to be well-informed, provide appropriate guidance to clinicians on specimen collection and handling, employ safe testing practices in the laboratory, and communicate with your local health department. For further information, check the MDCH website (www.michigan.gov/flu) or contact Patty Clark, Interim Virology Section Manager at (517) 335-8102 or clarkp@michigan.gov.